

April 8, 2016

MEMORANDUM

To: Allen Gaither, SWS Permitting Engineer
From: Perry Sugg, SWS Hydrogeologist
Reference: Permit Renewal (0603-CDLF)
Avery County CDLF - Avery County NC
Hydrogeology Review **DIN 25929**

I have reviewed the permit renewal application (DIN 25749) submitted for the referenced facility in regards to hydrogeological considerations (per 15A NCAC 13B .0544), specifically as contained in the permit renewal application: Attachment C – *Water Quality Monitoring Plan* (WQ Plan) and Attachment D *Landfill Gas Monitoring Plan* (LFG Plan). Pertinent components of the proposed *Operations Plan* (Attachment C) were also reviewed for consistency. The application was received by the Solid Waste Section (Section) on March 14, 2016 from Smith Gardner Engineers on behalf of Avery County. According to the permit application submittal, the Avery County is requesting an amendment to the operations permit for continuing operations through the next five-year permitting cycle.

The most recent Design Hydrogeologic Report for a landfill expansion was approved in 2010 (DIN 10060). Since the current request is for continued operation of approved activities, no additional geologic or hydrogeologic investigations (per 15A NCAC 13B .0538) are warranted at this time.

Water Quality and Landfill Gas Monitoring Plans

The Avery County CDLF facility is currently operating under water quality and landfill gas monitoring plans and operation manual (DIN 6894 and DIN 11333) approved by the Section in 2009 and 2010 as part of the permit-to-operate (DIN 13546) issued in 2011 for the landfill expansion. The approved documents included the current groundwater, surface water, and landfill gas monitoring network as it exists today: four (4) detection monitoring wells, two surface water monitoring locations, and four (4) LFG monitoring probes. This existing monitoring network is adequate for continual subsurface environmental monitoring the facility environmental. The monitoring plans are designed to detect early release of constituents to the uppermost aquifer and dangerous levels of explosive gases. Water sample collection is performed semiannually and reported to the Section. LFG measurements are taken quarterly and reported if exceedances are found.

In the current permit renewal application submitted by Smith Gardner, the facility Water Quality Monitoring Plan and the LFG Monitoring Plan remain basically unchanged with only minor updates.

Prior to final approval of these plans, the following revisions are requested:

- WQ Plan Section 2.2.1 Guidance Docs: Add the most recent guidance (November 5, 2014) for submittal of environmental data. Can be downloaded from our website: [SWS Electronic Data Submittal Memo - Nov2014](#)
- LFG Plan General: Due to the nature of materials disposed in them, C&D landfills are a source of the explosive gas hydrogen sulfide (H₂S). The plan as submitted needs to be amended to also include hydrogen sulfide gas (H₂S) monitoring. Please add H₂S monitoring for the following wells and buildings: GP-1, GP-2, GP3, GP-4 and Scalehouse.
- LFG Plan Section 2.3.4 Procedures: add regulatory action limits for hydrogen sulfide (4% by volume for 100 LEL and 1% by volume for 25% LEL, respectively)
- LFG Plan Section 2.3.3 Equipment: include equipment and/or method for H₂S measurements, if different than what's listed.
- LFG Plan Section 3 Contingency: add note about how to address H₂S readings detected above regulatory limits as well.
- LFG Monitoring Data Form: include column for H₂S measurements for the locations specified above.

That's it. Let me know if you want me to send directly to Smith Gardner or if you'd rather send along with your review comments. Thanks

A handwritten signature in blue ink, appearing to be 'B. J. M.' or similar, with a stylized, cursive script.